

5 WATER SUPPLY BASELINES AND TARGETS AND WATER SUPPLY RELIABILITY COMAPARISON TABLES

5.1 WATER BASELINES AND TARGETS

To comply with the SBX7-7 water conservation legislation, water suppliers must first establish a baseline water usage, which is then used to set targets for 2015 and 2020. The SBX7-7 legislation stipulates that targets must be established by using one of four allowable methods briefly defined as follows:

- Method 1: Per capita daily use equals eighty percent of the water supplier's baseline per capita usage;
- Method 2: Per capita daily use is set based on performance standards applied to indoor residential use; landscape area water use, and commercial, industrial and institutional use;
- Method 3: Per capita daily use is set at 95 percent of the applicable State hydrologic region target based on DWR's April 30, 2011 draft 20x2020 Water Conservation Plan (Cerritos is in the South Coast Region 4); and
- Method 4: Per capita daily use is set based on standards consistent with CUWCC BMPs

Detailed information on the calculation of Cerritos' baseline water usage and 2015 and 2020 per capita water conservation targets can be found in Appendix E, a Technical Memorandum dated March 29, 2011, entitled "20x2020 Baseline Calculation & Water Use Target Method Selection."

As noted in Appendix E, the City's per capita usage baseline average, minimum baseline average and SBX7-7 water conservation targets for 2015 and 2020 have been established as follows:

- Baseline Average (based on 13-year data from 1997-2010) = ~~131.4~~ ^{163.6} gpcd
- Minimum Baseline Average (based on 5-year data from 2004-2008) = ~~128.9~~ ^{161.3} gpcd
- 2015 Water Conservation Target = ~~127.0~~ ^{152.6} gpcd
- 2020 Water Conservation Target = ~~122.5~~ ^{141.6} gpcd

Method 3 is the most favorable for the City and these per capita usage targets will be used to develop water demands over the next 25 years.

5.2 WATER SUPPLY RELIABILITY COMPARISON TABLES

Tables 5.2-1 through 5.2-7 compare the City's anticipated available water supply with expected demands for normal, single dry and multiple dry years beginning in 2010 and extending through 2035.

Table 5.2-1
City of Cerritos
Projected Water Supply and Demand
Normal Water Year
(AFY – All projections rounded to nearest 10 AF)

Water Sources	2015	2020	2025	2030	2035
Supply	Normal Years				
MWD Projected Supply During a Normal Year as a % of Demand During a Normal Year ^[1]	203.0	232.7	258.9	243.9	231.0
Imported ^[2]	2,720	3,140	3,600	3,540	3,530
Local (Groundwater) ^[3]	8,680	8,680	8,680	8,680	8,680
Potable Water Supply Total	11,400	11,820	12,280	12,220	12,210
Recycled Water ^[4]	2,050	2,050	2,050	2,050	2,050
Total City Water Supply	13,450	13,870	14,330	14,270	14,260
Demand					
Imported ^[2]	1,340	1,350	1,390	1,450	1,530
Local (Groundwater) ^[3]	8,680	8,680	8,680	8,680	8,680
Potable Water Demand Total ^[5]	10,020	10,030	10,070	10,130	10,210
Recycled Water ^[4]	2,050	2,050	2,050	2,050	2,050
Total City Water Demand	12,070	12,080	12,120	12,180	12,260
2020 Per Capita (GPCD) ^[6]	129.6 163.0	129.6 162.9	-	-	-
% of 2010 Normal Year Demand (11,929 AF)	101.2	101.3	101.6	102.1	102.8
Supply/Demand Difference (Surplus)	1,380	1,790	2,210	2,090	2,000
Difference as a % of Supply	10.3	12.9	15.4	14.6	14.0
Difference as a % of Demand	11.4	14.8	18.2	17.2	16.3

[1] From Table 4.2-1, Row I

[2] Imported Water Supply = (Imported Water Demand) x (MWD Projected Supply Available During a Normal Year as a % of Demand During a Normal Year (from Table 4.2-1, Row I)); Imported Demand = Total Potable Demand - Groundwater

[3] Demand is equal to the sum of City of Cerritos adjudicated water rights of 4,680 AFY and estimated lease of 4,000 AFY in all future years. Groundwater Supply is estimated to equal Demand.

[4] Recycled Water Supply is estimated to equal Demand.

[5] Total Water Demand figures are based on the Agency's projections including unaccounted for water (Table 2.2-1)

[6] Total Potable Demand minus Recycled Water divided by Projected Population (from Table 1.3-3)

5.3 LOW-INCOME PROJECTED WATER DEMANDS

The California Water Code, Division 6, Part 2.6, Section 10631.1⁶⁴ requires each urban water retailer to include projected water use for single family and multi-family residential housing needed for lower income households as defined in Section 50079.5⁶⁵ of the Health and Safety Code, as identified in the housing element of the City.

Since the City's water service area is almost identical to the City limits, we will use the City's share of the regional housing needs for this section. The City of Cerritos' fair share for affordable housing units under the 2006-2014 Regional Housing Needs Assessment (RHNA) requirements includes 79 very low income households and 56 low income households.⁶⁶ Therefore, the very low and low income dwelling units total to 135 by 2014, which are the lower income housing units subject to the new Water Code requirements described in the first paragraph of this section. According to the Redevelopment Agency, none of these current low income housing unit requirements have been constructed to date. The Cuesta Villas project, which is specifically included in the population and demand increase projections in this UWMP to be constructed in the 2010 to 2015 time period, is projected to include 40 of these low and very low income households, leaving a requirement of 95 units, not specifically projected by the City or included specifically in these water demand projections. However, the total population increase projected between 2010 and 2015 from Table 1.3-3 is 354, would be enough to account for the total requirement of 135 units at a persons per dwelling unit of 2.62, which is slightly less than the current City average persons per dwelling unit. However, there is surplus water supply available as shown in Section 5 to more than meet the additional demand from the remainder of this low income housing requirement, if it is every actually constructed.

5.4 WATER USE REDUCTION PLAN

As demonstrated from the historical water usage data presented in Appendix E, the City has realized substantial reductions in per capita water usage in recent years. In fact, the City has met its 2015 water conservation target for ~~five~~ ^{four} of the past six years (~~2005-2007 and 2009-2010~~) and has met its 2020 target for ~~four~~ ^{two} of the past ~~six~~ years (~~2005-2006 and 2009-2010~~). Even if you ignore the past two drought years (2009 and 2010) and assume the three non-drought years of 2005-2007 were more representative (when baseline per capita usage averaged ~~123.2~~ ^{154.1} gpcd), it appears that achieving the 2015 and 2020 water conservation per capita demands of ~~127.6~~ ^{152.6} and ~~122.5~~ ^{141.6}, respectively, are well within reach. Table 5.2-1 shows a projected per capita use of ~~129.6~~ ^{162.9} gpd when the projected potable demand, including unaccounted-for water, ~~minus the projected recycled water use~~, is divided by the projected population from Table 1.3-2 for 2020. This equates to a total ~~uses conservative (high) demand projections and~~

⁶⁴ All California Law Codes can be accessed at this website: <http://www.leginfo.ca.gov/calaw.html>; Section 10631.1 of the California Water Code is available at this website:

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10630-10634>

⁶⁵ Section 500.79.5 of the Health and Safety Code is available at this website:

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=50001-51000&file=50050-50106>

⁶⁶ City of Cerritos Redevelopment Agency Five Year Implementation Plan, 2009/10 through 2013/14.

water volume of ~~390,244~~ ^{1,170,733} gpd or ~~437~~ ^{1,311} AFY that would need to be saved by 2020 to meet the SBX7-7 conservation target.

The City plans to meet its SBX7-7 water conservation targets, through a variety of means including:

- Possible increased usage of recycled water;
- Encouraging residents and businesses in the City to conserve water;
- Educating the public through a variety of programs on the need for continued water conservation; and
- Continuing to operate and maintain the water distribution system with an eye toward reducing water losses by repairing or eliminating any leaks that may develop as soon as practical.

Because the City is ~~so~~ close to meeting the goal, water usage should be monitored along with population growth annually and if additional conservation does not seem to be approaching the interim 2015 target, some of the methods above can be implemented to bring the per capita consumption into alignment with the interim and 2020 goals. ~~The most cost effective method could be converting additional landscape irrigation from potable to recycled water use as this not only reduces the potable demand but results in a credit as recycled water is subtracted from potable water to obtain the numerator in the SBX7-7 per capita calculation. Therefore, every acre-foot of irrigation demand converted to recycled water equates to two acre-feet of net water demand reduction towards determining the per capita consumption.~~

- Water used to fight fires. This water is also not metered.
- Customer meter inaccuracies. Meters have an inherent accuracy for a specified flow range. However, flow above or below this range is usually registered at a lower rate. Meters become less accurate with time due to wear.

Actual unaccounted-for water in 2005 and 2010 was 1,444 AF and 734 AF, respectively or approximately 9.2 percent and 3.2 percent of total water produced. The unaccounted-for water over the past seven years has averaged 3.0 percent. This percentage has been used to estimate unaccounted-for water for the years 2015 through 2035.

Table 6.2-1
Past, Current and Projected Water Use by Sector in AF

City Billing Class	2005	2010	2015	2020	2025	2030	2035
Single-Family Residential	5,523	5,011	5,962	5,974	6,008	6,071	6,146
Multi-Family Residential	497	539	679	679	679	679	679
Commercial / Institutional	1,992	1,958	2,308	2,308	2,308	2,308	2,308
Industrial	0	0	0	0	0	0	0
Landscape Irrigation (Potable) ^[1]	189	501	590	590	590	590	590
Other	88	0	0	0	0	0	0
Agriculture Irrigation	18	19	23	23	23	23	23
Subtotal Potable Water Use	8,307	8,028	9,562	9,573	9,608	9,670	9,745
Unaccounted for System Losses ^[2]	821	312	458	458	460	463	467
Total Potable Water Use	9,128	8,340	10,019	10,032	10,068	10,133	10,212
Recycled Water	1,708	2,799	1,257	2,046	2,046	2,046	2,046
Total Cerritos Water Usage	10,836	11,139	11,276	12,078	12,114	12,180	12,258

Source: 2005 and 2010 data obtained from annual Public Water System Statistics Reports submitted by City to DWR; 2005 and 2010 data is for fiscal years; projections for all future years are estimated based on minimal projected increase in City population as noted in Section 1 of this UWMP and on Cuesta Villas Senior Housing Development

[1] Landscape Irrigation usage reported in annual Public Water Systems Statistics Reports modified not to include recycled water

[2] 2010 unaccounted for losses are based on actual data; all other years based on an estimated average loss of 3.0% (i.e., the average percentage loss over the past seven fiscal years)

[Sold Water values were mistakenly placed here instead of Recycled Water]

water furnished through the facilities of the water system, as herein defined, to be wasted in any manner whatsoever.” In addition, drawing water from fire hydrants, tampering or removing of meters, tapping of mains (Ordinance No. 165, Section 10, 1966), or turning water on (after water has been turned off by City staff) are all limited through various prohibitions.

14. DMM 14 – Residential ULFT Replacement Program

The City and its customers have participated in the Metropolitan and CBMWD Ultra-Low Flush Toilet (ULFT) Replacement Program. CBMWD’s ULFT program includes free one-day toilet distributions and rebates based on available funding. Since 2005, CBMWD has completed the installation of over 5,000 HETs into single family, multi-family, CII facilities throughout its service area. Over this same period, the City has distributed an average of 131 ULFT rebates per year, with a water savings of 0.05 AFY per ULFT rebate.

Table 7.2-5 shows historic and projected ULFT rebates in the City’s service area.

The ULFT Replacement Program was discontinued by CBMWD in 2009 due to the fact they felt it had reached a saturation point from a cost effectiveness basis. Due to the current drought, Metropolitan re-instated this program and is currently offering a \$100 rebate, which City residents can participate in through CBMWD.

**Table 7.2-5
DMM 14 – City Historical and Projected Residential ULFT Rebates**

Item	2005	2006	2007	2008	2009	2010
# of Single Family Rebates	285	250	28	106	0	0
# of Multi-Family Rebates	8	5	105	0	0	0
Water Savings (AFY)	14.7	12.8	6.7	5.3	0	0

The method of effectiveness for the ULFT Program will include an analysis of water savings based on decreases in water demand as a result of the device implementation.

7.3 WATER USE EFFICIENCY EFFECTIVENESS

CBMWD adapts and applies the Metropolitan-Main Model, which forecasts water demands on both a regional basis and at the retail level to produce an estimate of future water demand, the identification of potential benefits, and costs associated with implementation of the DMMs. The conservation potential by each retail water agency is used to develop DMM implementation plans using a “least cost approach” to develop a “most cost effective” package of DMM programs customized for each retail agency. A Conservation Savings Model estimates the potential water conservation from implementation of the DMMs. Once the potential water savings are quantified, programs can be developed to target potential savings.

Quantifiable DMM programs include ULFT and low-flow showerhead retrofits, water audits and conservation pricing. Programs and activities that are not quantifiable, but known to save water, include public information, school education, conservation coordinator, water waste prohibitions, and metering with commodity rates.